

SEQUENCE LISTING

<110> TANHA, JAMSHID
DUBUC, GINETTE
NARANG, SARAN

<120> SINGLE-DOMAIN ANTIGEN-BINDING ANTIBODY FRAGMENTS
DERIVED FROM LLAMA ANTIBODIES

<130> 11054-1

<140> 10/031,874
<141> 2001-05-25

<150> 60/207,234
<151> 2000-05-26

<160> 212

<170> PatentIn Ver. 2.1

<210> 1
<211> 10
<212> PRT
<213> Lama glama

<400> 1
Gly Phe Thr Phe Ser Ser Tyr Tyr Met Ser
1 5 10

<210> 2
<211> 10
<212> PRT
<213> Lama glama

<400> 2
Gly Arg Thr Phe Ser Asn Tyr His Met Gly
1 5 10

<210> 3
<211> 10
<212> PRT
<213> Lama glama

<400> 3
Gly Arg Ile Phe Ser Asn Ala Ala Met Gly
1 5 10

<210> 4
<211> 10
<212> PRT
<213> Lama glama

<400> 4

Arg Ser Ile Phe Ser Ile Asn Thr Leu Gly
1 5 10

<210> 5
<211> 10
<212> PRT
<213> Lama glama

<400> 5
Gly Arg Ser Phe Ser Thr Tyr Arg Val Gly
1 5 10

<210> 6
<211> 10
<212> PRT
<213> Lama glama

<400> 6
Gly Asn Thr Ile Ser Gly Tyr Ala Thr Gly
1 5 10

<210> 7
<211> 10
<212> PRT
<213> Lama glama

<400> 7
Gly Gly Ser Phe Ser Asn Tyr Asn Met Gly
1 5 10

<210> 8
<211> 10
<212> PRT
<213> Lama glama

<400> 8
Gly Arg Ile Pro Arg Asn Tyr Pro Ile Gly
1 5 10

<210> 9
<211> 10
<212> PRT
<213> Lama glama

<400> 9
Gly Glu Ser Ile Ala Ser Phe Asn Leu Gly
1 5 10

<210> 10
<211> 10
<212> PRT

<213> Lama glama

<400> 10
Gly Arg Thr Phe Ser Ser Val Ser Met Gly
1 5 10

<210> 11

<211> 10

<212> PRT

<213> Lama glama

<400> 11
Gly Leu Thr Phe Gly Asp Tyr Ala Met Gly
1 5 10

<210> 12

<211> 10

<212> PRT

<213> Lama glama

<400> 12
Gly Arg Thr Phe Ser Ser Val Thr Met Gly
1 5 10

<210> 13

<211> 10

<212> PRT

<213> Lama glama

<400> 13
Gly Arg Thr Phe Ser Arg Phe Ala Met Gly
1 5 10

<210> 14

<211> 10

<212> PRT

<213> Lama glama

<400> 14
Gly Ser Ile Phe Ser Glu Ser Ala Met Gly
1 5 10

<210> 15

<211> 10

<212> PRT

<213> Lama glama

<400> 15
Gly Arg Thr Phe Ser Ser Asp Ala Met Gly
1 5 10

<210> 16
<211> 10
<212> PRT
<213> Lama glama

<400> 16
Gly Phe Thr Phe Ser Asn Phe Trp Met Gly
1 5 10

<210> 17
<211> 10
<212> PRT
<213> Lama glama

<400> 17
Gly Arg Ser Phe Asn His Tyr Ile Met Gly
1 5 10

<210> 18
<211> 10
<212> PRT
<213> Lama glama

<400> 18
Gly Leu Pro Phe Ser Thr Tyr Ser Met Gly
1 5 10

<210> 19
<211> 10
<212> PRT
<213> Lama glama

<400> 19
Gly Arg Thr Phe Ser Thr Tyr Thr Met Gly
1 5 10

<210> 20
<211> 10
<212> PRT
<213> Lama glama

<400> 20
Gly Tyr Thr Phe Ser Ser His Ala Met Gly
1 5 10

<210> 21
<211> 10
<212> PRT
<213> Lama glama

<400> 21
Gly Phe Arg Phe Ala Glu Tyr Ala Ile Gly

<210> 22
<211> 10
<212> PRT
<213> Lama glama

<400> 22
Gly Arg Thr Phe Ser Arg Phe Ala Met Gly
1 5 10

<210> 23
<211> 10
<212> PRT
<213> Lama glama

<400> 23
Gly Phe Thr Phe Val Asp Tyr Ser Met Thr
1 5 10

<210> 24
<211> 10
<212> PRT
<213> Lama glama

<400> 24
Gly Phe Thr Phe Ser Asn Tyr Tyr Met Tyr
1 5 10

<210> 25
<211> 10
<212> PRT
<213> Lama glama

<400> 25
Gly Gly Thr Phe Thr Asp Tyr Ala Met Gly
1 5 10

<210> 26
<211> 10
<212> PRT
<213> Lama glama

<400> 26
Gly Gly Thr Phe Thr Asp Tyr Ala Met Gly
1 5 10

<210> 27
<211> 10
<212> PRT
<213> Lama glama

<400> 27

Gly Phe Thr Phe Ser Asn Tyr Tyr Met Tyr
1 5 10

<210> 28

<211> 10
<212> PRT
<213> Lama glama

<400> 28

Gly Asn Thr Ile Ser Asp Tyr Ala Thr Gly
1 5 10

<210> 29

<211> 17
<212> PRT
<213> Lama glama

<400> 29

Gly Ile Tyr Ser Asp Ser Ser Ile Thr Ala Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 30

<211> 17
<212> PRT
<213> Lama glama

<400> 30

Ser Ile Lys Trp Ser Gly Gly Asn Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 31

<211> 17
<212> PRT
<213> Lama glama

<400> 31

Ala Ile Arg Trp Ser Asp Gly Asn Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 32

<211> 16
<212> PRT
<213> Lama glama

<400> 32
Trp Ile Thr Ser Gly Gly Ala Thr Tyr Tyr Ala Asp Ser Met Lys Gly
1 5 10 15

<210> 33
<211> 17
<212> PRT
<213> Lama glama

<400> 33
Gly Ile Asn Trp Asn Gly Val Lys Thr Arg Tyr Ser Asp Ser Met Asn
1 5 10 15

Asp

<210> 34
<211> 17
<212> PRT
<213> Lama glama

<400> 34
Ala Val Thr Trp Ser Gly Tyr Ser Val Tyr Tyr Ala Lys Ser Pro Lys
1 5 10 15

Gly

<210> 35
<211> 17
<212> PRT
<213> Lama glama

<400> 35
Gly Ile Gly Trp Ser Gly Gly Arg Ile Ile Val Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 36
<211> 17
<212> PRT
<213> Lama glama

<400> 36
Gly Ile Ser Trp Thr Ser Gly Thr Thr Tyr Phe Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 37
<211> 17
<212> PRT
<213> Lama glama

<400> 37
Ala Val Ser Arg Thr Gly Glu Thr Thr Asp Tyr Ala Asp Ala Val Lys
1 5 10 15

Gly

<210> 38
<211> 17
<212> PRT
<213> Lama glama

<400> 38
Ala Ile Asn Trp Arg Gly Val Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 39
<211> 17
<212> PRT
<213> Lama glama

<400> 39
Thr Ile Ser Arg Ile Gly Ser Thr Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 40
<211> 17
<212> PRT
<213> Lama glama

<400> 40
Ala Met Thr Arg Asn Ser Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 41
<211> 17
<212> PRT
<213> Lama glama

<400> 41
Ala Ile Ser Trp Ser Gly Gly Thr Thr Tyr Gly Ala Asp Ser Ala Lys
1 5 10 15

Gly

<210> 42

<211> 16
<212> PRT
<213> Lama glama

<400> 42
Ala Ile Thr Leu Asp Gly Arg Thr Asn Tyr Ala Tyr Tyr Ala Glu Gly
1 5 10 15

<210> 43
<211> 17
<212> PRT
<213> Lama glama

<400> 43
Ala Ile Ser Trp Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 44
<211> 17
<212> PRT
<213> Lama glama

<400> 44
Gln Ile Asn Thr Gly Gly Asp Ile Thr Thr Tyr Ser Asp Ser Val Lys
1 5 10 15

Gly

<210> 45
<211> 17
<212> PRT
<213> Lama glama

<400> 45
Ser Ile Asp Trp Asn Ser Gly Arg Thr Asn Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 46
<211> 17
<212> PRT
<213> Lama glama

<400> 46
Val Ile Gly Gly Gly Gly Asn Thr Tyr His Ala Ala Asp Ser Leu Lys
1 5 10 15

Asp

<210> 47
<211> 17
<212> PRT
<213> Lama glama

<400> 47
Ala Ile Ser Arg Asn Ser Val Gly Thr Tyr Tyr Arg Asp Ser Val Lys
1 5 10 15

Gly

<210> 48
<211> 17
<212> PRT
<213> Lama glama

<400> 48
Ala Ile Ser Ala Ser Gly Gly Asn Gln Tyr Tyr Lys Tyr Phe Ala Lys
1 5 10 15

Gly

<210> 49
<211> 17
<212> PRT
<213> Lama glama

<400> 49
Tyr Ile Ser Thr Ser Asp Lys Thr Thr Tyr Tyr Ser Asp Phe Ala Glu
1 5 10 15

Gly

<210> 50
<211> 17
<212> PRT
<213> Lama glama

<400> 50
Ala Ile Ser Trp Ser Gly Gly Thr Ala Tyr Gly Ala Asp Ser Ala Lys
1 5 10 15

Gly

<210> 51
<211> 17
<212> PRT
<213> Lama glama

<400> 51
Ala Ile Asn Trp Asn Gly Arg Leu Thr Tyr Tyr Ala Glu Ser Met Lys
1 5 10 15

Gly

<210> 52
<211> 17
<212> PRT
<213> Lama glama

<400> 52
Met Val Asn Thr Gly Gly Gly Thr Arg Tyr Ala Asp Ser Val Arg
1 5 10 15

Gly

<210> 53
<211> 17
<212> PRT
<213> Lama glama

<400> 53
Ala Ile Ile Thr Ser Gly Arg Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 54
<211> 17
<212> PRT
<213> Lama glama

<400> 54
Ala Ile Asn Trp Gly Gly Tyr Ser Thr Tyr Tyr Ser Asp Ala Val Lys
1 5 10 15

Gly

<210> 55
<211> 17
<212> PRT
<213> Lama glama

<400> 55
Met Val Asn Thr Gly Gly Gly Thr Arg Tyr Ala Asp Ser Val Arg
1 5 10 15

Gly

<210> 56
<211> 17
<212> PRT
<213> Lama glama

<400> 56

Ser Ile Gly Arg Arg Thr Gly Trp Gln Val Tyr Ser Asp Ser Val Lys
1 5 10 15

Gly

<210> 57
<211> 12
<212> PRT
<213> Lama glama

<400> 57
Met Val Met Gly Pro Ala Ala Thr Gly Tyr Glu Tyr
1 5 10

<210> 58
<211> 17
<212> PRT
<213> Lama glama

<400> 58
Gly Ser Lys Tyr Gly Ser Trp Ser Arg Ser Gln Asp Ala Tyr Asn
1 5 10 15

Tyr

<210> 59
<211> 17
<212> PRT
<213> Lama glama

<400> 59
Gly Ile Gly Thr Phe Gly Ser Ser Trp Thr Arg Ala Asp Arg Tyr Arg
1 5 10 15

Tyr

<210> 60
<211> 6
<212> PRT
<213> Lama glama

<400> 60
Arg Val Pro Leu Asp Tyr
1 5

<210> 61
<211> 16
<212> PRT
<213> Lama glama

<400> 61
Asp Gln Arg Phe Asp Gly Asp Asp Trp Ser Pro Ser Ala Phe Thr Arg

1

5

10

15

<210> 62
<211> 16
<212> PRT
<213> Lama glama

<400> 62
Val Phe Val Arg Thr Ala Gly Val Pro Thr Leu Gly Glu Tyr Asp Tyr
1 5 10 15

<210> 63
<211> 15
<212> PRT
<213> Lama glama

<400> 63
Thr Lys Gln Phe Phe Pro Leu Ser Asn Ser Val Trp Tyr Asp Tyr
1 5 10 15

<210> 64
<211> 20
<212> PRT
<213> Lama glama

<400> 64
Ser Glu Arg Asp Phe Tyr Thr Arg Asn Tyr Tyr Phe Thr Phe Glu Ser
1 5 10 15

Leu Tyr Asp Tyr
20

<210> 65
<211> 17
<212> PRT
<213> Lama glama

<400> 65
Asp Tyr Asn Leu Gly Thr Phe Val Thr Arg Lys Asp Ser Met Tyr Asp
1 5 10 15

Phe

<210> 66
<211> 15
<212> PRT
<213> Lama glama

<400> 66
Arg Arg Asn Phe Phe Gly Asn Asn Ser Ala Gly Gln Tyr Ala Tyr
1 5 10 15

<210> 67
<211> 12
<212> PRT
<213> Lama glama

<400> 67
Ser Arg Tyr Val Leu Lys Tyr Asp Lys Asp Ala Tyr
1 5 10

<210> 68
<211> 17
<212> PRT
<213> Lama glama

<400> 68
Lys Ala Ser Met Tyr Gly Ser Thr Leu Tyr Pro Pro Thr Gly Tyr Asn
1 5 10 15

Tyr

<210> 69
<211> 9
<212> PRT
<213> Lama glama

<400> 69
Gly Arg Ala Val Ser Asp Tyr Asp Tyr
1 5

<210> 70
<211> 13
<212> PRT
<213> Lama glama

<400> 70
Leu Arg Ser Arg Ala Val Met Asp Thr Ile Pro Asn Tyr
1 5 10

<210> 71
<211> 17
<212> PRT
<213> Lama glama

<400> 71
Asp Arg Arg Arg Tyr Tyr Ser Gly Ser Tyr Pro Pro Ser Glu Tyr Asp
1 5 10 15

Tyr

<210> 72
<211> 14

<212> PRT
<213> Lama glama

<400> 72
Ala Arg Ser Val Pro Leu Ser Asp Pro Arg Thr Tyr Ser Ser
1 5 10

<210> 73
<211> 14
<212> PRT
<213> Lama glama

<400> 73
Ala Ala Ala Ala Ser Thr Leu Val Gly Gly Ser Tyr Asp Tyr
1 5 10

<210> 74
<211> 22
<212> PRT
<213> Lama glama

<400> 74
Asp Arg Asp Phe Thr Ile Val Ala Gly Phe Ile Arg Ser Gln Tyr Ser
1 5 10 15

Pro Arg Ala Val Glu Tyr
20

<210> 75
<211> 15
<212> PRT
<213> Lama glama

<400> 75
Asp Pro Met Tyr Gly Arg Ser Val Met Ser Thr Arg Tyr Asn Tyr
1 5 10 15

<210> 76
<211> 18
<212> PRT
<213> Lama glama

<400> 76
Ala Thr Lys Gln Phe Ser Asn Ala Tyr Ser Asp Tyr Val His Asp Tyr
1 5 10 15

Asp Tyr

<210> 77
<211> 17
<212> PRT
<213> Lama glama

<400> 77
Gly Leu Tyr Tyr Ser Asp Tyr Arg Thr Pro Glu Tyr Thr Glu Tyr Val
1 5 10 15

His

<210> 78
<211> 9
<212> PRT
<213> Lama glama

<400> 78
Gly Arg Ala Val Ser Asp Tyr Asp Tyr
1 5

<210> 79
<211> 12
<212> PRT
<213> Lama glama

<400> 79
Gly Glu Leu Tyr Gly Met Gly Ser Lys His Asp Tyr
1 5 10

<210> 80
<211> 11
<212> PRT
<213> Lama glama

<400> 80
Asp Arg Pro Gln Ser Gly Trp Ser Met Asp Tyr
1 5 10

<210> 81
<211> 13
<212> PRT
<213> Lama glama

<400> 81
Thr Lys Trp Val Val Arg Arg Pro Ala Asp Tyr Asn Tyr
1 5 10

<210> 82
<211> 12
<212> PRT
<213> Lama glama

<400> 82
Asp Pro Gln Leu Ile Thr Thr Pro Glu Tyr Asn Tyr
1 5 10

<210> 83
<211> 11
<212> PRT
<213> Lama glama

<400> 83
Asp Arg Pro Gln Ser Gly Trp Ser Met Asp Tyr
1 5 10

<210> 84
<211> 18
<212> PRT
<213> Lama glama

<400> 84
Ser Gln Asp Ser Gly Phe Asp Thr Pro Val Thr Glu Ser His Leu Tyr
1 5 10 15

Gly Tyr

<210> 85
<211> 10
<212> PRT
<213> Lama glama

<400> 85
Gly Phe Thr Phe Ser Ser Tyr Ala Met Ser
1 5 10

<210> 86
<211> 10
<212> PRT
<213> Lama glama

<400> 86
Gly Phe Thr Phe Ser Ser Tyr Tyr Met Ser
1 5 10

<210> 87
<211> 10
<212> PRT
<213> Lama glama

<400> 87
Gly Phe Thr Phe Asp Glu His Ala Ile Gly
1 5 10

<210> 88
<211> 10
<212> PRT
<213> Lama glama

<400> 88
Gly Phe Thr Val Ser Ser Asn His Met Thr
1 5 10

<210> 89
<211> 10
<212> PRT
<213> Lama glama

<400> 89
Gly Phe Thr Phe Ser Ser Tyr His Met Ala
1 5 10

<210> 90
<211> 10
<212> PRT
<213> Lama glama

<400> 90
Gly Phe Thr Phe Asp Glu His Ala Ile Gly
1 5 10

<210> 91
<211> 10
<212> PRT
<213> Lama glama

<400> 91
Gly Phe Thr Phe Ser Arg His Gln Met Ser
1 5 10

<210> 92
<211> 10
<212> PRT
<213> Lama glama

<400> 92
Gly Phe Thr Phe Arg Thr Tyr Tyr Met Asn
1 5 10

<210> 93
<211> 10
<212> PRT
<213> Lama glama

<400> 93
Gly Phe Ile Phe Ser Ser Tyr Ala Met Ser
1 5 10

<210> 94

<211> 10
<212> PRT
<213> Lama glama

<400> 94
Gly Phe Ile Phe Ser Ser Tyr Ala Met Ser
1 5 10

<210> 95
<211> 10
<212> PRT
<213> Lama glama

<400> 95
Gly Phe Thr Phe Ser Thr Tyr Ala Met Thr
1 5 10

<210> 96
<211> 10
<212> PRT
<213> Lama glama

<400> 96
Gly Phe Thr Phe Ser Ser Tyr Ala Met Ser
1 5 10

<210> 97
<211> 10
<212> PRT
<213> Lama glama

<400> 97
Gly Phe Thr Phe Ser Arg His Gln Met Ser
1 5 10

<210> 98
<211> 10
<212> PRT
<213> Lama glama

<400> 98
Gly Phe Thr Phe Ser Arg Tyr Ala Met Ser
1 5 10

<210> 99
<211> 10
<212> PRT
<213> Lama glama

<400> 99
Gly Phe Thr Phe Ser Gly Tyr Ala Met Ser
1 5 10

<210> 100
<211> 10
<212> PRT
<213> Lama glama

<400> 100
Gly Phe Ala Phe Ser Asn Tyr Arg Met Thr
1 5 10

<210> 101
<211> 10
<212> PRT
<213> Lama glama

<400> 101
Gly Phe Thr Phe Ser Arg Tyr Ala Met Ser
1 5 10

<210> 102
<211> 17
<212> PRT
<213> Lama glama

<400> 102
Gly Ile Glu Gly Gly Gly Ile Thr Arg Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 103
<211> 17
<212> PRT
<213> Lama glama

<400> 103
Thr Ile Lys Pro Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 104
<211> 16
<212> PRT
<213> Lama glama

<400> 104
Thr Ile Asp Ile Gly Gly Arg Thr Tyr Ala Asp Ser Val Lys Gly
1 5 10 15

<210> 105

<211> 17
<212> PRT
<213> Lama glama

<400> 105
Arg Ile Ser Ser Asp Gly Arg Asn Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 106
<211> 17
<212> PRT
<213> Lama glama

<400> 106
Thr Ile Asn Pro Gly Asp Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 107
<211> 16
<212> PRT
<213> Lama glama

<400> 107
His Ile Asp Thr Gly Gly Ser Thr Trp Tyr Ala Ala Ser Val Lys Gly
1 5 10 15

<210> 108
<211> 16
<212> PRT
<213> Lama glama

<400> 108
His Ile Asp Thr Gly Gly Ser Thr Trp Tyr Ala Ala Ser Val Lys Gly
1 5 10 15

<210> 109
<211> 17
<212> PRT
<213> Lama glama

<400> 109
Thr Ile Asn Ile Asp Gly Ser Ser Thr Tyr Tyr Ala Asp Ser Val Arg
1 5 10 15

Gly

<210> 110
<211> 17

<212> PRT

<213> Lama glama

<400> 110

Gly Ile Asn Ser Phe Gly Gly Ser Lys Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 111

<211> 17

<212> PRT

<213> Lama glama

<400> 111

Gly Ile Asn Ser Phe Gly Gly Ser Lys Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 112

<211> 17

<212> PRT

<213> Lama glama

<400> 112

Thr Ile Asn Thr Ser Gly Arg Gly Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 113

<211> 17

<212> PRT

<213> Lama glama

<400> 113

Ala Ile Asn Ser Gly Gly Ser Thr Ser Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 114

<211> 17

<212> PRT

<213> Lama glama

<400> 114

His Ile Asp Thr Gly Gly Ser Thr Trp Tyr Ala Ala Ser Val Lys
1 5 10 15

Gly

<210> 115
<211> 17
<212> PRT
<213> Lama glama

<400> 115
Asp Ile Asn Ser Gly Gly Asp Ser Thr Arg Asn Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 116
<211> 17
<212> PRT
<213> Lama glama

<400> 116
Ser Ile Asn Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 117
<211> 17
<212> PRT
<213> Lama glama

<400> 117
Arg Ile Asn Ser Ile Gly Asp Arg Ile Ser Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 118
<211> 17
<212> PRT
<213> Lama glama

<400> 118
Asp Ile Asn Ser Gly Gly Asp Ser Thr Arg Asn Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 119
<211> 10
<212> PRT
<213> Lama glama

<400> 119
Ala His Gly Gly Tyr Gly Ala Phe Gly Ser
1 5 10

<210> 120
<211> 10
<212> PRT
<213> Lama glama

<400> 120
Ala His Gly Gly Tyr Gly Ala Phe Gly Ser
1 5 10

<210> 121
<211> 10
<212> PRT
<213> Lama glama

<400> 121
Ala His Gly Gly Tyr Gly Ala Phe Gly Ser
1 5 10

<210> 122
<211> 8
<212> PRT
<213> Lama glama

<400> 122
Tyr Ser Gly Gly Ala Leu Asp Ala
1 5

<210> 123
<211> 8
<212> PRT
<213> Lama glama

<400> 123
Tyr Ser Gly Gly Ala Leu Asp Ala
1 5

<210> 124
<211> 8
<212> PRT
<213> Lama glama

<400> 124
Leu Ser Gln Gly Ala Met Asp Tyr
1 5

<210> 125
<211> 8
<212> PRT
<213> Lama glama

<400> 125
Leu Ser Gln Gly Ala Met Asp Tyr
1 5

<210> 126
<211> 8
<212> PRT
<213> Lama glama

<400> 126
Leu Ser Gln Gly Ala Met Asp Tyr
1 5

<210> 127
<211> 9
<212> PRT
<213> Lama glama

<400> 127
Ile Asp Arg Glu Arg Ala Phe Thr Ser
1 5

<210> 128
<211> 9
<212> PRT
<213> Lama glama

<400> 128
Ile Asp Trp Glu Arg Ala Phe Thr Ser
1 5

<210> 129
<211> 9
<212> PRT
<213> Lama glama

<400> 129
Gln Gly Tyr Ala Gly Ser Tyr Asp Tyr
1 5

<210> 130
<211> 9
<212> PRT
<213> Lama glama

<400> 130
Leu Gly Val Pro Gly Thr Phe Asp Tyr
1 5

<210> 131
<211> 8

<212> PRT
<213> Lama glama

<400> 131
Thr Asn Arg Gly Ile Phe Asp Tyr
1 5

<210> 132
<211> 10
<212> PRT
<213> Lama glama

<400> 132
Thr Pro Gly Ser Ser Gly Val Tyr Glu Tyr
1 5 10

<210> 133
<211> 8
<212> PRT
<213> Lama glama

<400> 133
Thr Gln Thr Gly Ser His Asp Tyr
1 5

<210> 134
<211> 8
<212> PRT
<213> Lama glama

<400> 134
Gln Val Gly Thr Ala Tyr Asp Tyr
1 5

<210> 135
<211> 10
<212> PRT
<213> Lama glama

<400> 135
Arg Arg Gly Ser Ser Gly Val Tyr Glu Tyr
1 5 10

<210> 136
<211> 10
<212> PRT
<213> Lama glama

<400> 136
Gly Ser Arg Arg Ser Phe Asn Val Met Gly
1 5 10

<210> 137
<211> 10
<212> PRT
<213> Lama glama

<400> 137
Gly Asp Thr Phe Ser Ile Asn Ala Tyr Gly
1 5 10

<210> 138
<211> 10
<212> PRT
<213> Lama glama

<400> 138
Gly Phe Thr Phe Arg Asp Tyr Trp Met Tyr
1 5 10

<210> 139
<211> 10
<212> PRT
<213> Lama glama

<400> 139
Gly Ile Thr Phe Ser Glu Lys His Met Ala
1 5 10

<210> 140
<211> 10
<212> PRT
<213> Lama glama

<400> 140
Gly Arg Thr Phe Ser Ser Tyr Gly Met Gly
1 5 10

<210> 141
<211> 10
<212> PRT
<213> Lama glama

<400> 141
Gly Arg Thr Phe Ser Ser Tyr Gly Met Gly
1 5 10

<210> 142
<211> 10
<212> PRT
<213> Lama glama

<400> 142

Gly Thr Ser Ser Gly Ile Asn Ala Met Val
1 5 10

<210> 143
<211> 10
<212> PRT
<213> Lama glama

<400> 143
Gly Arg Thr Phe Ser Ser Tyr Ser Met Ala
1 5 10

<210> 144
<211> 10
<212> PRT
<213> Lama glama

<400> 144
Val Ser Thr Phe Ser Ile Gly Ala Ile Gly
1 5 10

<210> 145
<211> 10
<212> PRT
<213> Lama glama

<400> 145
Gly Ser Thr Phe Ser Gly Asn Asp Ile Gly
1 5 10

<210> 146
<211> 10
<212> PRT
<213> Lama glama

<400> 146
Gly Arg Thr Phe Ser Ser Tyr Gly Met Gly
1 5 10

<210> 147
<211> 10
<212> PRT
<213> Lama glama

<400> 147
Gly Arg Thr Phe Ser Asp Ile Ala Met Ala
1 5 10

<210> 148
<211> 10
<212> PRT

<213> Lama glama

<400> 148
Gly Gln Thr Leu Asn Thr Tyr Val Met Gly
1 5 10

<210> 149

<211> 10
<212> PRT
<213> Lama glama

<400> 149
Gly Pro Thr Ser Ile Thr Tyr Gly Met Ala
1 5 10

<210> 150

<211> 10
<212> PRT
<213> Lama glama

<400> 150
Gly Gly Asp Val Ser Thr Tyr Ala Met Val
1 5 10

<210> 151

<211> 10
<212> PRT
<213> Lama glama

<400> 151

Gly Arg Thr Phe Gly Ser Tyr Thr Met Gly
1 5 10

<210> 152

<211> 10
<212> PRT
<213> Lama glama

<400> 152

Gly Arg Thr Phe Ser Ser Tyr Gly Met Gly
1 5 10

<210> 153

<211> 10
<212> PRT
<213> Lama glama

<400> 153

Gly Ser Leu Ser Arg Ile Thr Val Met Gly
1 5 10

<210> 154
<211> 10
<212> PRT
<213> Lama glama

<400> 154
Gly Ser Ile Ser Ser Phe Asp Ala Met Ala
1 5 10

<210> 155
<211> 10
<212> PRT
<213> Lama glama

<400> 155
Gly Arg Pro Phe Ser Ser Phe Ala Met Gly
1 5 10

<210> 156
<211> 10
<212> PRT
<213> Lama glama

<400> 156
Gly Arg Thr Phe Ser Ser Tyr His Met Gly
1 5 10

<210> 157
<211> 16
<212> PRT
<213> Lama glama

<400> 157
Thr Ile Thr Val Gly Asp Thr Thr Ser Tyr Ala Glu Ala Val Lys Gly
1 5 10 15

<210> 158
<211> 17
<212> PRT
<213> Lama glama

<400> 158
Ala Ile Ser Gly Arg Gly Thr Asn Thr Phe Val Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 159
<211> 17
<212> PRT
<213> Lama glama

<400> 159
Ser Ile Tyr Ser Asp Gly Ser Arg Thr Ala Tyr Ala Ala Ser Val Lys
1 5 10 15

Gly

<210> 160
<211> 16
<212> PRT
<213> Lama glama

<400> 160
Val Ile Thr Arg Gly Gly Thr Thr Asn Tyr Gly Asp Ser Val Lys Gly
1 5 10 15

<210> 161
<211> 16
<212> PRT
<213> Lama glama

<400> 161
Gly Ile Thr Lys Asn Gly Val Thr Tyr Tyr Ala Pro Ser Val Thr Gly
1 5 10 15

<210> 162
<211> 17
<212> PRT
<213> Lama glama

<400> 162
Ala Met Arg Glu Ser Gly Ala Asp Thr His Tyr Ala Asp Phe Val Arg
1 5 10 15

Gly

<210> 163
<211> 17
<212> PRT
<213> Lama glama

<400> 163
Ala Met Arg Glu Ser Gly Ala Asp Thr His Tyr Ala Asp Phe Val Arg
1 5 10 15

Gly

<210> 164
<211> 16
<212> PRT
<213> Lama glama

<400> 164

Thr Ile Thr Asn Ser Gly Lys Thr Asp Tyr Ala Ala Ser Ala Lys Gly
1 5 10 15

<210> 165
<211> 17
<212> PRT
<213> Lama glama

<400> 165
Ala Ile Asn Trp Arg Ser Ser Val Thr Ala Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 166
<211> 16
<212> PRT
<213> Lama glama

<400> 166
Gly Ile Ser Gly Gly Ser Thr Tyr Tyr Thr Asp Ser Val Lys Gly
1 5 10 15

<210> 167
<211> 16
<212> PRT
<213> Lama glama

<400> 167
Val Ile Ser Asp Gly Gly Tyr Thr Ser Tyr Ala Thr Ser Val Lys Gly
1 5 10 15

<210> 168
<211> 17
<212> PRT
<213> Lama glama

<400> 168
Ala Ile Ser Trp Gly Ala Gly Thr Pro Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 169
<211> 17
<212> PRT
<213> Lama glama

<400> 169
Ala Ile Asp Trp Asn Gly Gly Thr Thr Tyr Tyr Thr Thr Phe Val Lys
1 5 10 15

Gly

<210> 170
<211> 17
<212> PRT
<213> Lama glama

<400> 170
Ala Ile Asn Trp Arg Asp Thr Ser Thr Tyr Tyr Gln Asp Ser Val Lys
1 5 10 15

Gly

<210> 171
<211> 17
<212> PRT
<213> Lama glama

<400> 171
Ala Val Thr Pro Ser Gly Gly Ala Ala Ala Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 172
<211> 17
<212> PRT
<213> Lama glama

<400> 172
Leu Leu Ser Arg Ser Gly Arg Thr Thr Asn Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 173
<211> 16
<212> PRT
<213> Lama glama

<400> 173
Arg Ile Asn Ser Ala Gly Arg Thr Met Tyr Ala Asp Ser Val Lys Gly
1 5 10 15

<210> 174
<211> 17
<212> PRT
<213> Lama glama

<400> 174
Ser Ile Asn Trp Arg Gly Ser Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 175
<211> 16
<212> PRT
<213> Lama glama

<400> 175
Ile Ile Thr Ser Ser Gly Gly Thr Asp Tyr Ala Asp Ser Val Lys Gly
1 5 10 15

<210> 176
<211> 16
<212> PRT
<213> Lama glama

<400> 176
Ile Ile Thr Ser Gly Gly Ala Thr Asn Tyr Ala Asp Ser Val Lys Gly
1 5 10 15

<210> 177
<211> 17
<212> PRT
<213> Lama glama

<400> 177
Ala Ile Ser Ala Ser Gly Gly Glu Thr Tyr Tyr Thr Gly Ser Leu Lys
1 5 10 15

Gly

<210> 178
<211> 15
<212> DNA
<213> Lama glama

<220>
<221> modified_base
<222> (2)
<223> a, t, c, g, other or unknown

<400> 178
anwsgdtttyy asvkqg 15

<210> 179
<211> 17
<212> PRT
<213> Lama glama

<400> 179
Ala Ile Asn Trp Ser Gly Asp Thr Thr Tyr Tyr Glu Ala Ser Val Lys

1

5

10

15

Gly

<210> 180
<211> 11
<212> PRT
<213> Lama glama

<400> 180
Glu Glu Trp Leu Gly Val Arg Gln Asn Asn Tyr
1 5 10

<210> 181
<211> 3
<212> PRT
<213> Lama glama

<400> 181
Gly Glu Tyr
1

<210> 182
<211> 12
<212> PRT
<213> Lama glama

<400> 182
Met Leu Leu Gly Pro Gly Ala Pro Gly Tyr Asp Tyr
1 5 10

<210> 183
<211> 9
<212> PRT
<213> Lama glama

<400> 183
Asp Phe Tyr Gly Leu Gly Phe Asp Tyr
1 5

<210> 184
<211> 16
<212> PRT
<213> Lama glama

<400> 184
Ala Pro Lys Tyr Glu Gly Val Ser Asp Thr Ser Ser Asp Tyr Asn Tyr
1 5 10 15

<210> 185
<211> 9

<212> PRT
<213> Lama glama

<400> 185
Leu Asp Ile Thr Thr Ala Ala Ser Tyr
1 5

<210> 186
<211> 7
<212> PRT
<213> Lama glama

<400> 186
Thr Ile Asn Gly Ala Ala Arg
1 5

<210> 187
<211> 7
<212> PRT
<213> Lama glama

<400> 187
Thr Ile Asn Gly Ala Ala Arg
1 5

<210> 188
<211> 11
<212> PRT
<213> Lama glama

<400> 188
Glu Ala Leu Pro Gly Thr Tyr Gly Leu Asp Tyr
1 5 10

<210> 189
<211> 9
<212> PRT
<213> Lama glama

<400> 189
Ile Leu Ala Gly Gly Leu Leu Ala Phe
1 5

<210> 190
<211> 7
<212> PRT
<213> Lama glama

<400> 190
Gly Gly Ser Ser Gly Thr Phe
1 5

<210> 191
<211> 7
<212> PRT
<213> Lama glama

<400> 191
Thr Ile Asn Gly Ala Ala Arg
1 5

<210> 192
<211> 9
<212> PRT
<213> Lama glama

<400> 192
Leu Asp Ile Thr Thr Ala Ala Ser Tyr
1 5

<210> 193
<211> 7
<212> PRT
<213> Lama glama

<400> 193
Thr Ile Asn Gly Ala Ala Arg
1 5

<210> 194
<211> 12
<212> PRT
<213> Lama glama

<400> 194
Gly Thr Glu Leu Ala Pro Lys Thr Ala Thr Gly Ala
1 5 10

<210> 195
<211> 3
<212> PRT
<213> Lama glama

<400> 195
Gly Ser Asn
1

<210> 196
<211> 13
<212> PRT
<213> Lama glama

<400> 196

Gly Thr Val Leu Ser Val Ala Thr Gly Pro Tyr Gly Tyr
1 5 10

<210> 197
<211> 9
<212> PRT
<213> Lama glama

<400> 197
Trp Gly Ala Gly Glu Asp Glu Asp Tyr
1 5

<210> 198
<211> 12
<212> PRT
<213> Lama glama

<400> 198
Lys Ser Arg Asp Ser Ala Gly Leu Ser Trp Asp Tyr
1 5 10

<210> 199
<211> 11
<212> PRT
<213> Lama glama

<400> 199
Leu Val Ala Ser Thr Val Thr Ser Ser Val Ser
1 5 10

<210> 200
<211> 7
<212> PRT
<213> Lama glama

<400> 200
Thr Ile Asn Gly Ala Ala Arg
1 5

<210> 201
<211> 18
<212> PRT
<213> Lama glama

<400> 201
Gln Thr Arg Pro Arg Pro Tyr Gly Thr Ser Arg Ala Glu Gly Asp Tyr
1 5 10 15

Gly Tyr

<210> 202

<211> 30
<212> PRT
<213> Lama glama

<400> 202
Asp Val Lys Cys Asp Met Glu Val Ser Cys Pro Asp Gly Tyr Thr Cys
1 5 10 15
Ser Arg Leu Gln Ser Gly Ala Trp Gly Cys Ser Pro Phe Thr
20 25 30

<210> 203
<211> 30
<212> PRT
<213> Lama glama

<400> 203
Val Val His Cys Asp Met Glu Val Ile Cys Pro Asp Gly Tyr Thr Cys
1 5 10 15
Ser Arg Leu Pro Ser Gly Ala Trp Gly Cys Ser Pro Phe Thr
20 25 30

<210> 204
<211> 30
<212> PRT
<213> Lama glama

<400> 204
Asp Val Lys Cys Asp Met Glu Val Ser Cys Pro Asp Gly Tyr Thr Cys
1 5 10 15
Ser Arg Leu Pro Ser Gly Ala Trp Gly Cys Ser Pro Phe Thr
20 25 30

<210> 205
<211> 15
<212> PRT
<213> Lama glama

<400> 205
Ser Met Glu Arg Val Glu Trp Leu Arg Lys Leu Leu Gln Asp Val
1 5 10 15

<210> 206
<211> 31
<212> PRT
<213> Lama glama

<400> 206
Ser Val Ser Glu Ile Gln Leu Met His Asn Leu Gly Lys His Leu Asn
1 5 10 15

Ser Met Glu Arg Val Glu Trp Leu Arg Lys Leu Leu Gln Asp Val
20 25 30

<210> 207
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 207 21
cgccatcaag gtaccagttg a

<210> 208
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 208 29
gatgtgcagc tgcaggcgtc tggrrggagg

<210> 209
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 209 29
catgaccaca gtgcacagga kgtscagct

<210> 210
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 210 33
cgattctgcg gcccgtgagg agacggtgac ctg

<210> 211
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 211
tatgaagaca ccaggccgat gtgcagctgc aggcg

35

<210> 212
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 212
tatggatcct gaggagacgg tgacctg

27